ANNEX

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ANNEX

BAT CONCLUSIONS FOR THE REFINING OF MINERAL OIL AND GAS SCOPE

These BAT conclusions cover certain industrial activities specified in Section 1.2 of Annex I to Directive 2010/75/EU, namely '1.2. Refining of mineral oil and gas'.

In particular, these BAT conclusions cover the following processes and activities:

Activity	Subactivities or processes included in activity
Alkylation	All alkylation processes: hydrofluoric acid (HF), sulphuric acid (H ₂ SO ₄) and solid-acid
Base oil production	Deasphalting, aromatic extraction, wax processing and lubricant oil hydrofinishing
Bitumen production	All techniques from storage to final product additives
Catalytic cracking	All types of catalytic cracking units such as fluid catalytic cracking
Catalytic reforming	Continuous, cyclic and semi-regenerative catalytic reforming
Coking	Delayed and fluid coking processes. Coke calcination
Cooling	Cooling techniques applied in refineries
Desalting	Desalting of crude oil
Combustion units for energy production	Combustion units burning refinery fuels, excluding units using only conventional or commercial fuels
Etherification	Production of chemicals (e.g. alcohols and ethers such as MTBE, ETBE and TAME) used as motor fuels additives
Gas separation	Separation of light fractions of the crude oil e.g. refinery fuel gas (RFG), liquefied petroleum gas (LPG)
Hydrogen consuming processes	Hydrocracking, hydrorefining, hydrotreatments, hydroconversion, hydroprocessing and hydrogenation processes
Hydrogen production	Partial oxidation, steam reforming, gas heated reforming and hydrogen purification
Isomerisation	Isomerisation of hydrocarbon compounds C_4 , C_5 and C_6
Natural gas plants	Natural gas (NG) processing including liquefaction of NG

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Polymerisation	Polymerisation, dimerisation and condensation
Primary distillation	Atmospheric and vacuum distillation
Product treatments	Sweetening and final product treatments
Storage and handling of refinery materials	Storage, blending, loading and unloading of refinery materials
Visbreaking and other thermal conversions	Thermal treatments such as visbreaking or thermal gas oil process
Waste gas treatment	Techniques to reduce or abate emissions to air
Waste water treatment	Techniques to treat waste water prior to release
Waste management	Techniques to prevent or reduce the generation of waste

These BAT conclusions do not address the following activities or processes:

- the exploration and production of crude oil and natural gas;
- the transportation of crude oil and natural gas;
- the marketing and distribution of products.

Other reference documents which may be relevant for the activities covered by these BAT conclusions are the following:

Reference document	Subject
Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector (CWW)	Waste water management and treatment techniques
Industrial Cooling Systems (ICS)	Cooling processes
Economics and Cross-media Effects (ECM)	Economics and cross-media effects of techniques
Emissions from Storage (EFS)	Storage, blending, loading and unloading of refinery materials
Energy Efficiency (ENE)	Energy efficiency and integrated refinery management
Large Combustion Plants (LCP)	Combustion of conventional and commercial fuels
Large Volume Inorganic Chemicals — Ammonia, Acids and Fertilisers Industries (LVIC-AAF)	Steam reforming and hydrogen purification
Large Volume Organic Chemical Industry (LVOC)	Etherification process (MTBE, ETBE and TAME production)
Waste Incineration (WI)	Waste incineration
Waste Treatment (WT)	Waste treatment

 $Commission\ Implementing\ Decision\ of\ 9\ October\ 2014\ establishing\ best\ available\ techniques\ (BAT)\ conclusions,...$

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General Principles of Monitoring (MON)

Monitoring of emissions to air and water

3

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